

CLAIMS

1. A process for producing a metal oxide particle comprising a core part and a surface layer differing in the composition, the process comprising:

5 providing a sol containing at least a population of first colloid particles and a population of second colloid particles differing in the isoelectric point with each other,

10 adjusting the pH of said sol to be closer to the isoelectric point of said population of first colloid particles than to the isoelectric point of said population of second colloid particles, thereby aggregating said population of first colloid particles,

15 adjusting the pH of said sol to be closer to the isoelectric point of said population of second colloid particles than to the isoelectric point of said population of first colloid particles, thereby aggregating said population of second colloid particles onto said population of first colloid particles  
20 aggregated, and

drying and firing the obtained aggregate.

2. The process according to claim 1, wherein the pH of said sol is changed to pass the isoelectric point of said population of first colloid particles, thereby  
25 aggregating said population of first colloid particles.

3. The process according to claim 1 or 2, wherein the pH of said sol is changed to pass the isoelectric point of said population of second colloid particles, thereby aggregating said population of second colloid  
30 particles.

4. The process according to any one of claims 1 to 3, wherein said population of first colloid particles and said population of second colloid particles each is independently selected from the group consisting of  
35 alumina, ceria, zirconia and titania colloid particles.

5. The process according to claim 4, wherein said population of first colloid particles is zirconia,

alumina or titania, and said population of second colloid particles is ceria.

5       6.    An exhaust gas purifying catalyst for internal combustion engine, comprising a particulate support and a noble metal supported thereon, the particulate support comprising a core part relatively rich in zirconia ( $\text{ZrO}_2$ ) and a surface layer relatively rich in ceria ( $\text{CeO}_2$ ), the content of  $\text{CeO}_2$  in the particulate support being 40 to 65 mol% or less.

10       7.    The exhaust gas purifying catalyst for internal combustion engine according to claim 6, wherein the content of  $\text{CeO}_2$  in the particulate support is 45 to 55 mol%.

15       8.    The exhaust gas purifying catalyst for internal combustion engine according to claim 6 or 7, wherein the surface layer comprises at least one element selected from the group consisting of alkaline earth metals and rare earths.

20       9.    The exhaust gas purifying catalyst for internal combustion engine according to claim 8, wherein the element comprised in the surface layer is at least one element of Y and Nd.

25       10.   The exhaust gas purifying catalyst for internal combustion engine according to claim 6 or 7, wherein the core part comprises at least one element selected from the group consisting of alkaline earth metals and rare earths.

30       11.   The exhaust gas purifying catalyst for internal combustion engine according to claim 10, wherein the element comprised in the core part is Y.